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TITLE: Ferroelectric memory and recording device using the same

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Detailed Description Text - DETX (5):

FIG. 3 shows the relationships between the charge amount and the applied voltage for the saturation polarization amount  $P_s$  and the residual polarization amount  $P_r$ . The difference between the saturation polarization amount  $P_s$  and the residual polarization amount  $P_r$  is called back switching.  $V_c'$  is a coercive voltage obtained from the hysteresis characteristics, and  $V_c$  is a coercive voltage obtained from the  $P_r$ - $V$  characteristic. As in FIG. 3,  $V_c'$  and  $V_c$  are not necessarily equal. (I) indicates a region of a polarized state in which polarization is set in a first direction by a first pulse  $V_e$  (to be described later). When a second pulse  $V_w$  (to be described later) is applied in this state (I), the state (I) transits to a region (III) in which a polarized state almost inverted in a second direction is obtained. In this region, no polarization inversion occurs, i.e., the polarization does not change. (II) indicates a region of partial polarization. Partial polarization is a polarized state having a mixture of the polarization in the first direction and the polarization in the second direction (FIGS. 5A and 5B).